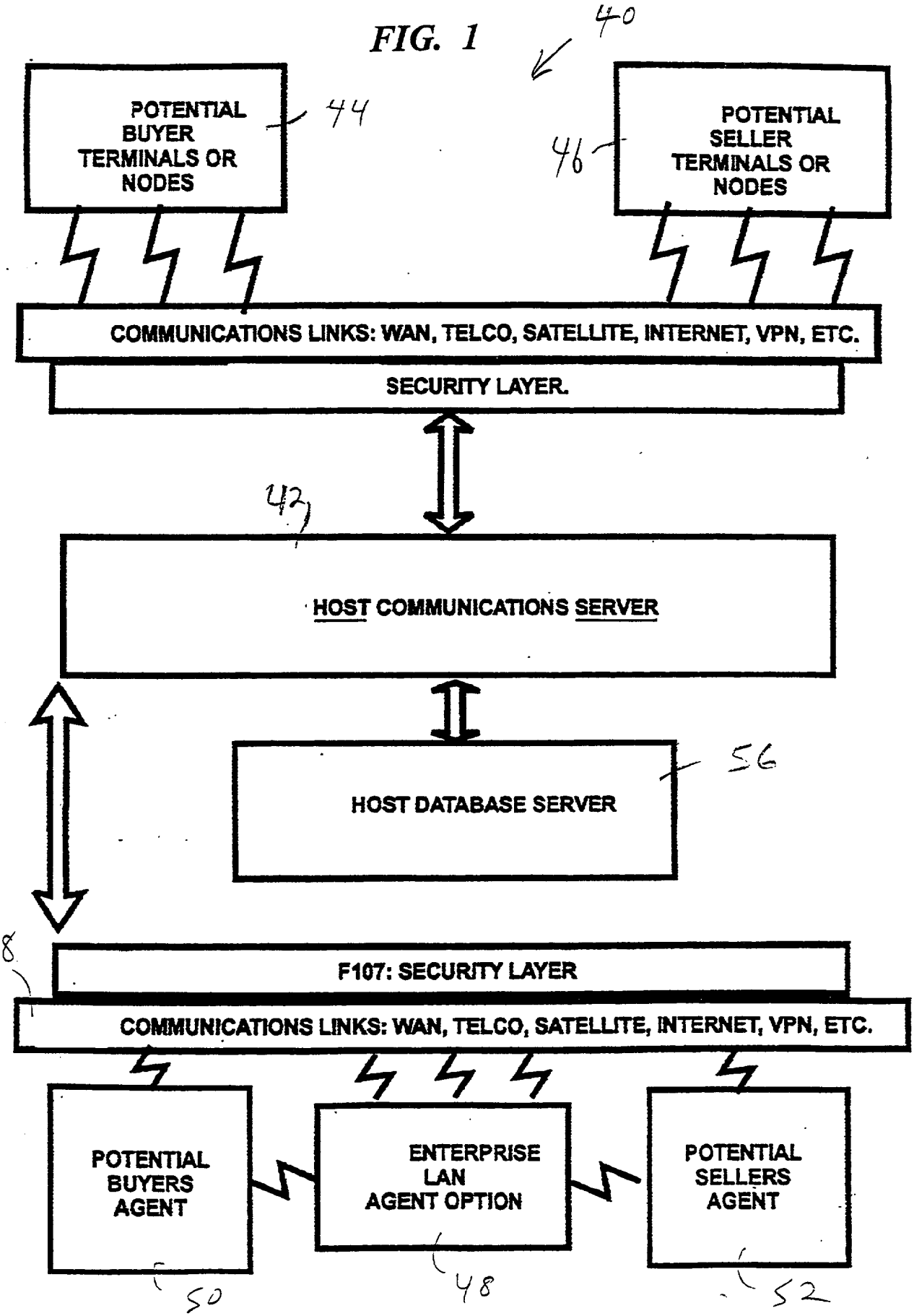
FIG. 1


40
POTENTIAL BUYER TERMINALS OR NODES
44
46
POTENTIAL SELLER TERMINALS OR NODES
COMMUNICATIONS LINKS: WAN, TELCO, SATELLITE, INTERNET, VPN, ETC.
SECURITY LAYER.
42
HOST COMMUNICATIONS SERVER
HOST DATABASE SERVER
56
58
F107: SECURITY LAYER
COMMUNICATIONS LINKS: WAN, TELCO, SATELLITE, INTERNET, VPN, ETC.
POTENTIAL BUYERS AGENT
ENTERPRISE LAN AGENT OPTION
POTENTIAL SELLERS AGENT
50
48
52

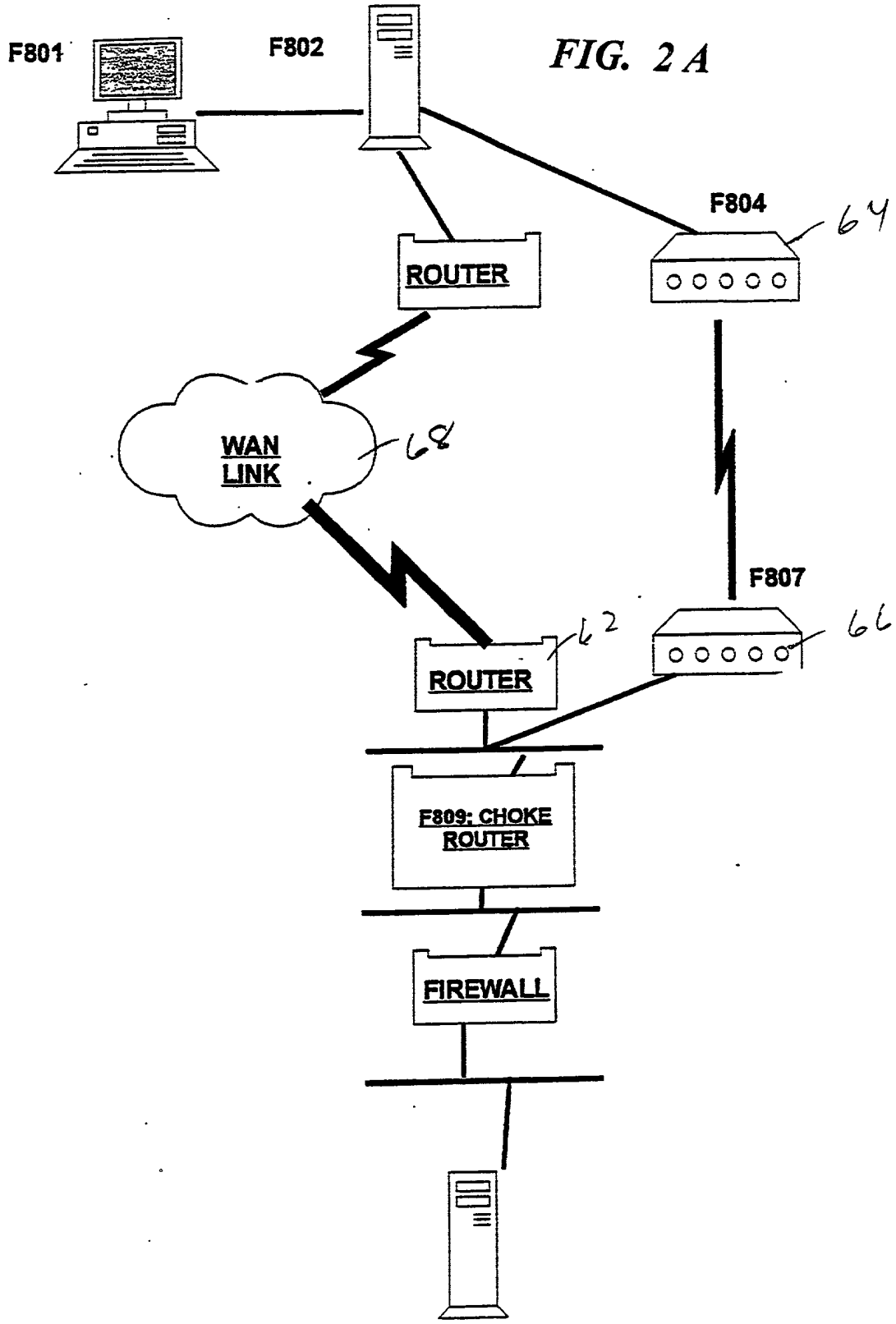

F801
F802
F804
64
ROUTER
WAN
LINK
68
F807
62
66
ROUTER
F809: CHOKE
ROUTER
FIREWALL

FIG. 2A

FIG. 2 B

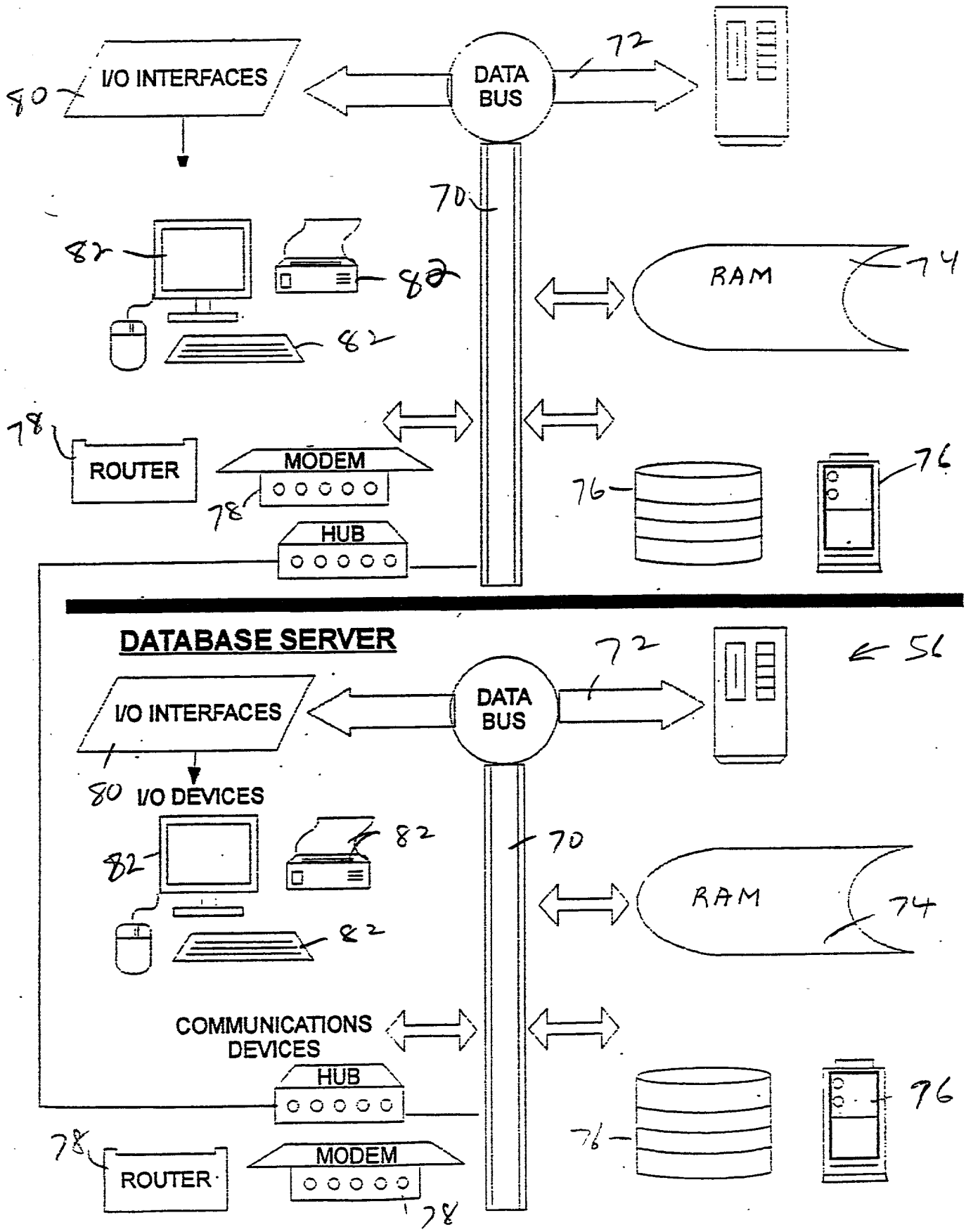

42
I/O INTERFACES
80
DATA BUS
72
70
82
82
82
RAM
74
78
ROUTER
MODEM
78
HUB
76
76
DATABASE SERVER
56
72
I/O INTERFACES
DATA BUS
80 I/O DEVICES
82
82
82
70
RAM
74
COMMUNICATIONS DEVICES
HUB
78
ROUTER
MODEM
78
76
76

FIG. 3

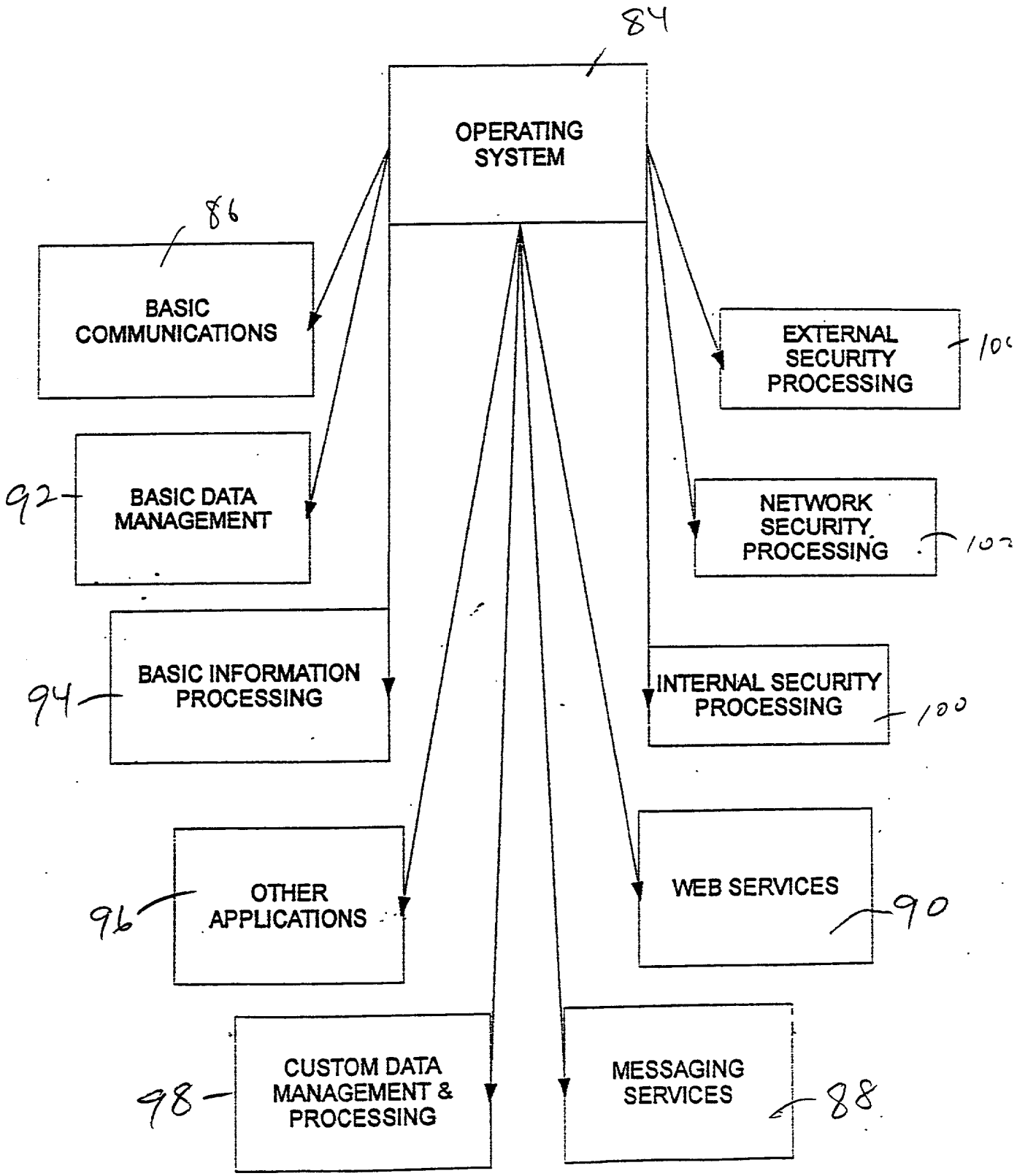

84
OPERATING SYSTEM
86
BASIC COMMUNICATIONS
92
BASIC DATA MANAGEMENT
94
BASIC INFORMATION PROCESSING
96
OTHER APPLICATIONS
98
CUSTOM DATA MANAGEMENT & PROCESSING
EXTERNAL SECURITY PROCESSING
102
NETWORK SECURITY PROCESSING
INTERNAL SECURITY PROCESSING
100
WEB SERVICES
90
MESSAGING SERVICES
88

FIG. 4 A

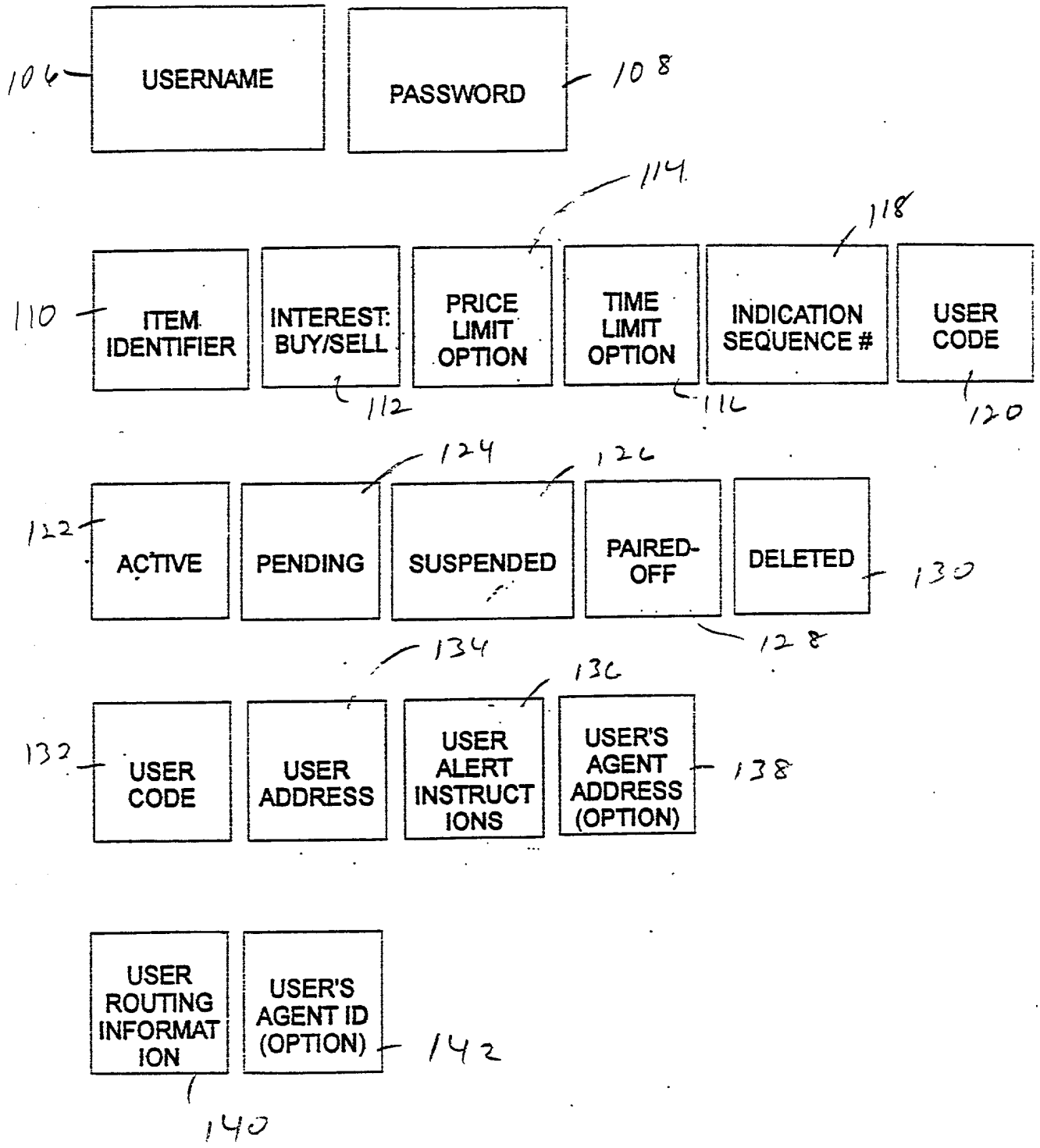

106
USERNAME
PASSWORD
108
114
118
110
ITEM IDENTIFIER
INTEREST: BUY/SELL
PRICE LIMIT OPTION
TIME LIMIT OPTION
INDICATION SEQUENCE #
USER CODE
112
116
120
124
126
122
ACTIVE
PENDING
SUSPENDED
PAIRED-OFF
DELETED
130
128
134
136
132
USER CODE
USER ADDRESS
USER ALERT INSTRUCTIONS
USER'S AGENT ADDRESS (OPTION)
138
USER ROUTING INFORMATION
USER'S AGENT ID (OPTION)
142
140

FIG. 4 B

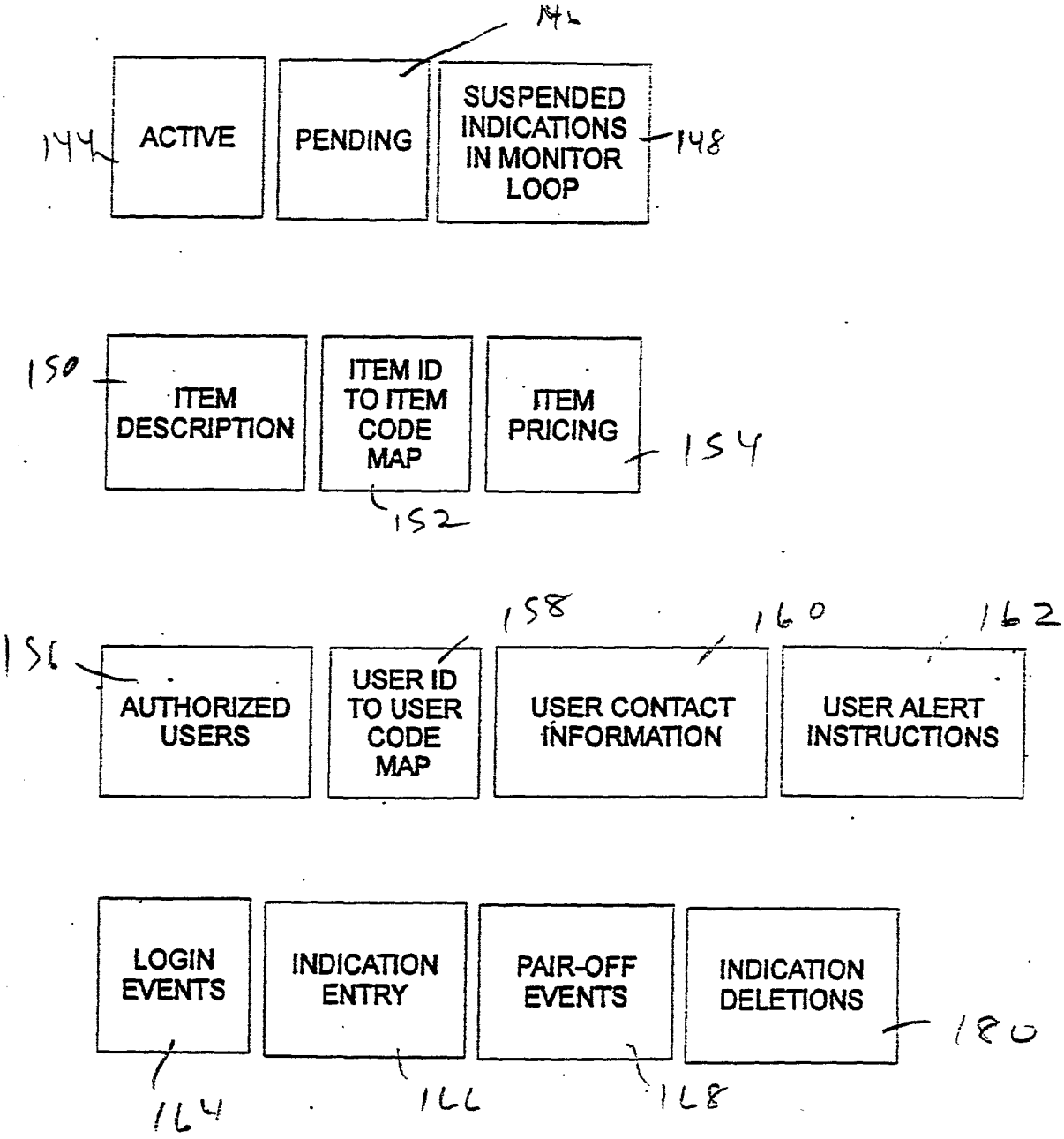
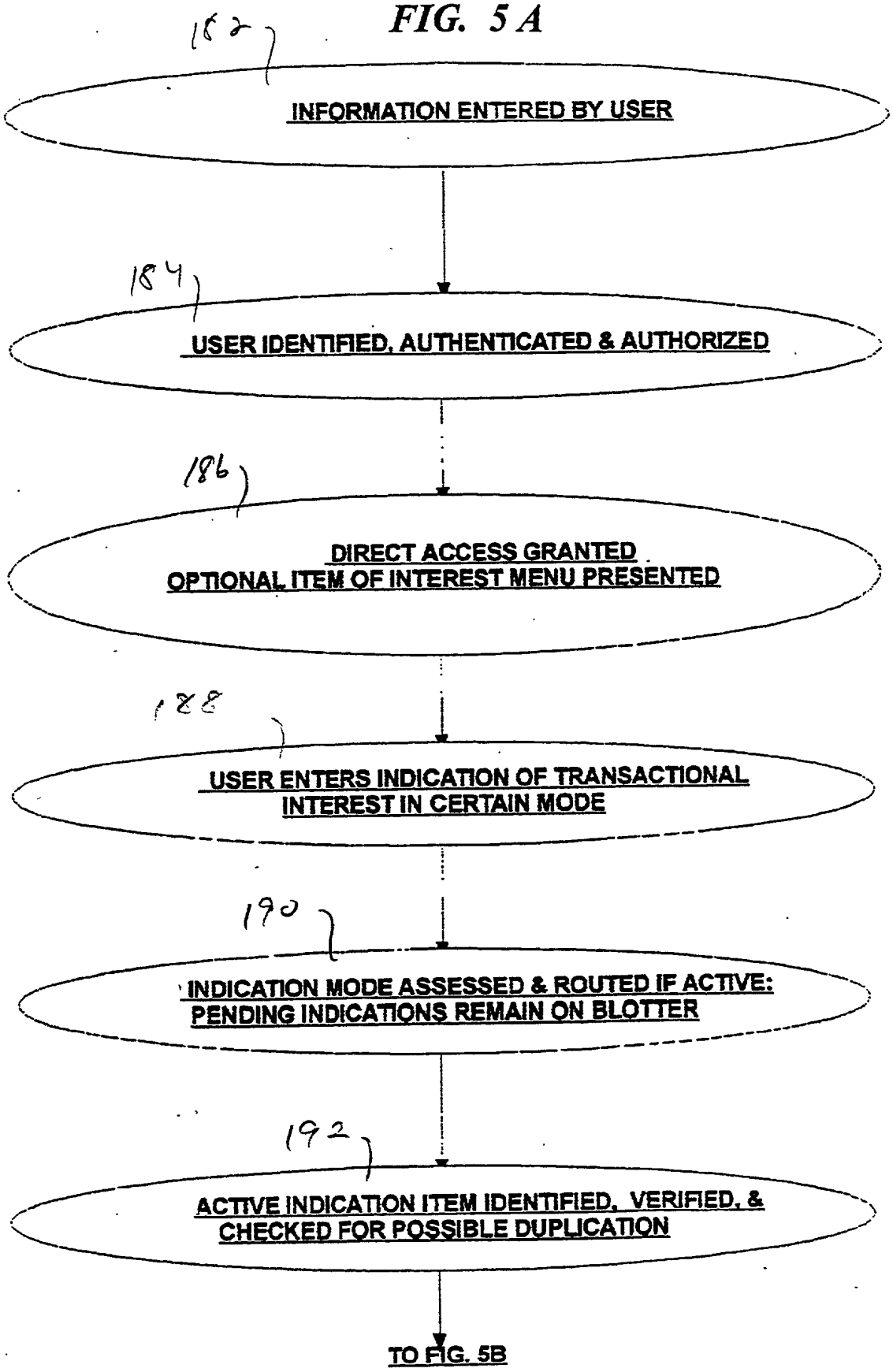

ACTIVE
PENDING
SUSPENDED INDICATIONS IN MONITOR LOOP
ITEM DESCRIPTION
ITEM ID TO ITEM CODE MAP
ITEM PRICING
AUTHORIZED USERS
USER ID TO USER CODE MAP
USER CONTACT INFORMATION
USER ALERT INSTRUCTIONS
LOGIN EVENTS
INDICATION ENTRY
PAIR-OFF EVENTS
INDICATION DELETIONS

FIG. 5A


182
INFORMATION ENTERED BY USER
184
USER IDENTIFIED, AUTHENTICATED & AUTHORIZED
186
DIRECT ACCESS GRANTED
OPTIONAL ITEM OF INTEREST MENU PRESENTED
188
USER ENTERS INDICATION OF TRANSACTIONAL INTEREST IN CERTAIN MODE
190
INDICATION MODE ASSESSED & ROUTED IF ACTIVE: PENDING INDICATIONS REMAIN ON BLOTTER
192
ACTIVE INDICATION ITEM IDENTIFIED, VERIFIED, & CHECKED FOR POSSIBLE DUPLICATION
TO FIG. 5B

FROM FIG. 5A

FIG. 5 B

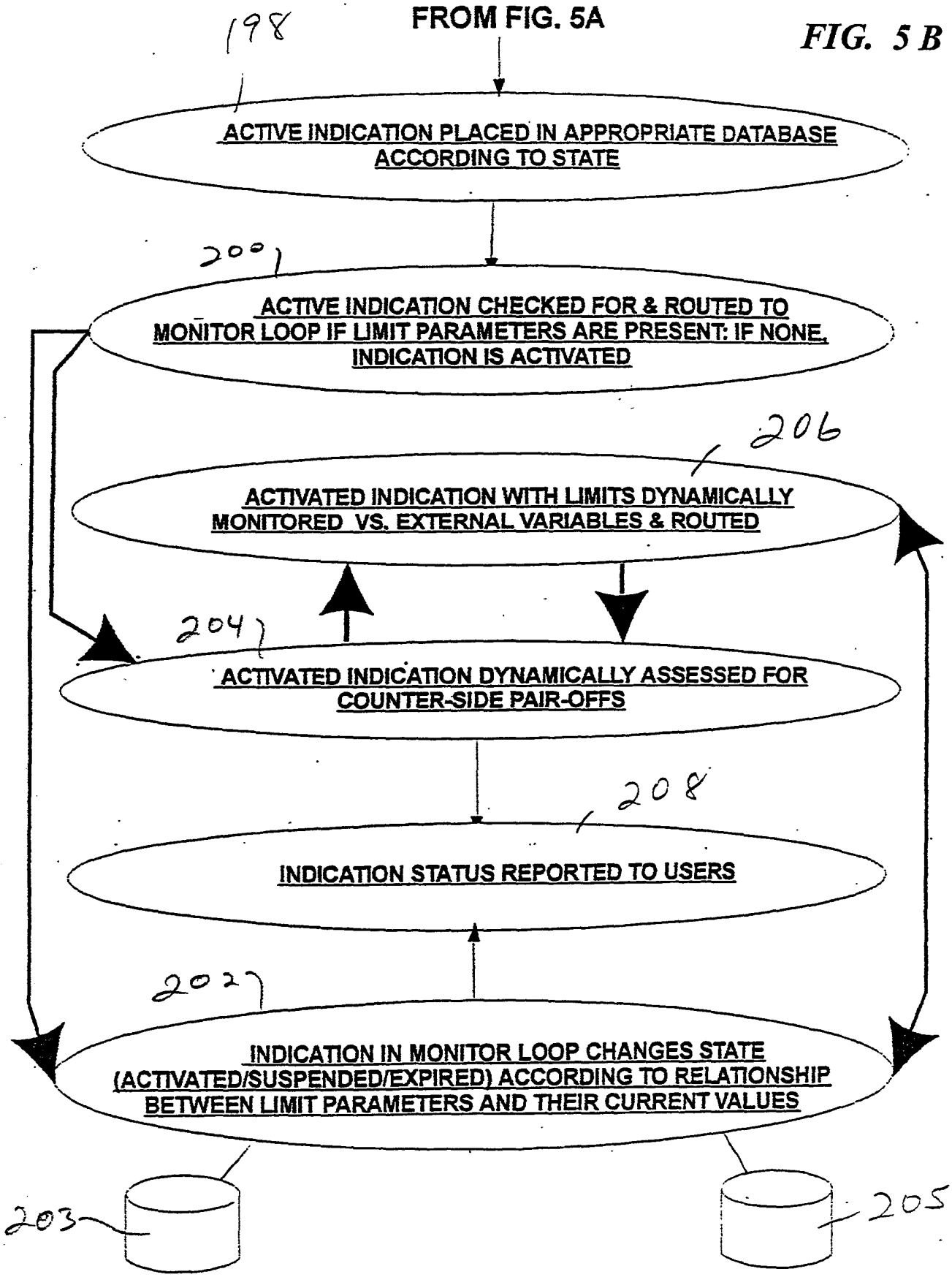
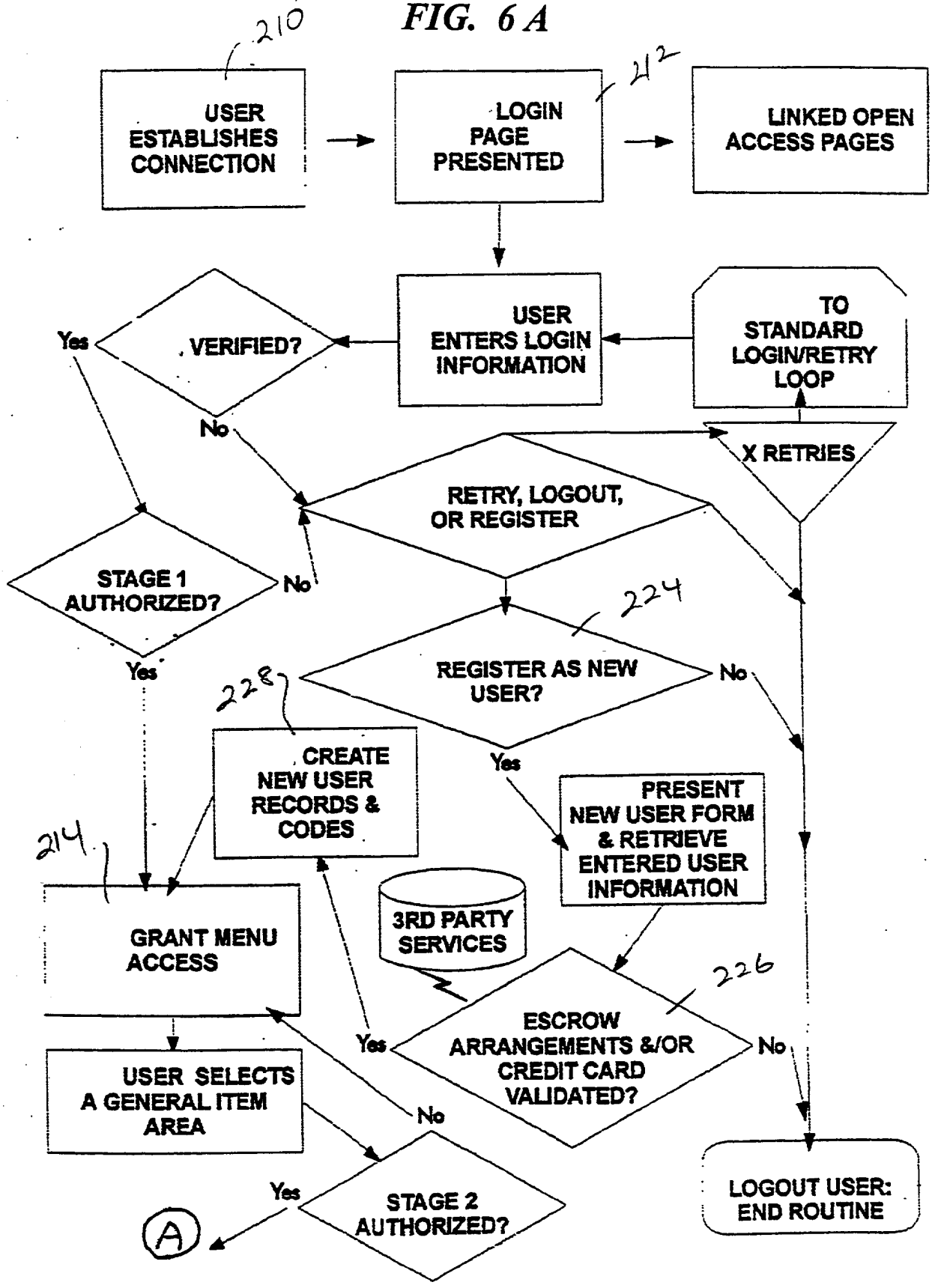


FIG. 6A


210
USER ESTABLISHES CONNECTION
212
LOGIN PAGE PRESENTED
LINKED OPEN ACCESS PAGES
USER ENTERS LOGIN INFORMATION
TO STANDARD LOGIN/RETRY LOOP
VERIFIED?
Yes
No
X RETRIES
RETRY, LOGOUT, OR REGISTER
STAGE 1 AUTHORIZED?
No
Yes
224
REGISTER AS NEW USER?
No
Yes
228
CREATE NEW USER RECORDS & CODES
PRESENT NEW USER FORM & RETRIEVE ENTERED USER INFORMATION
214
GRANT MENU ACCESS
3RD PARTY SERVICES
226
ESCROW ARRANGEMENTS &/OR CREDIT CARD VALIDATED?
Yes
No
USER SELECTS A GENERAL ITEM AREA
No
Yes
STAGE 2 AUTHORIZED?
A
LOGOUT USER: END ROUTINE

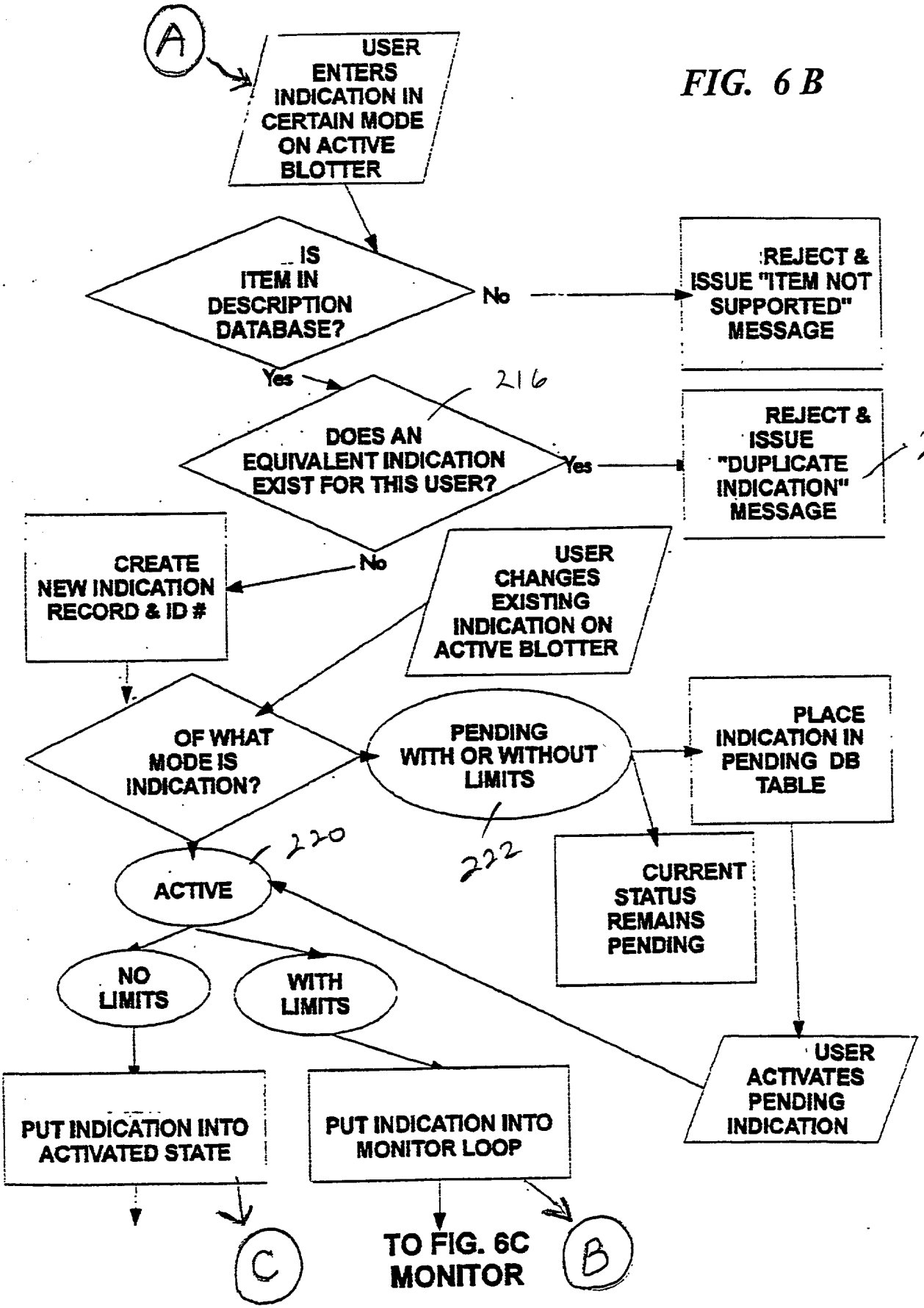
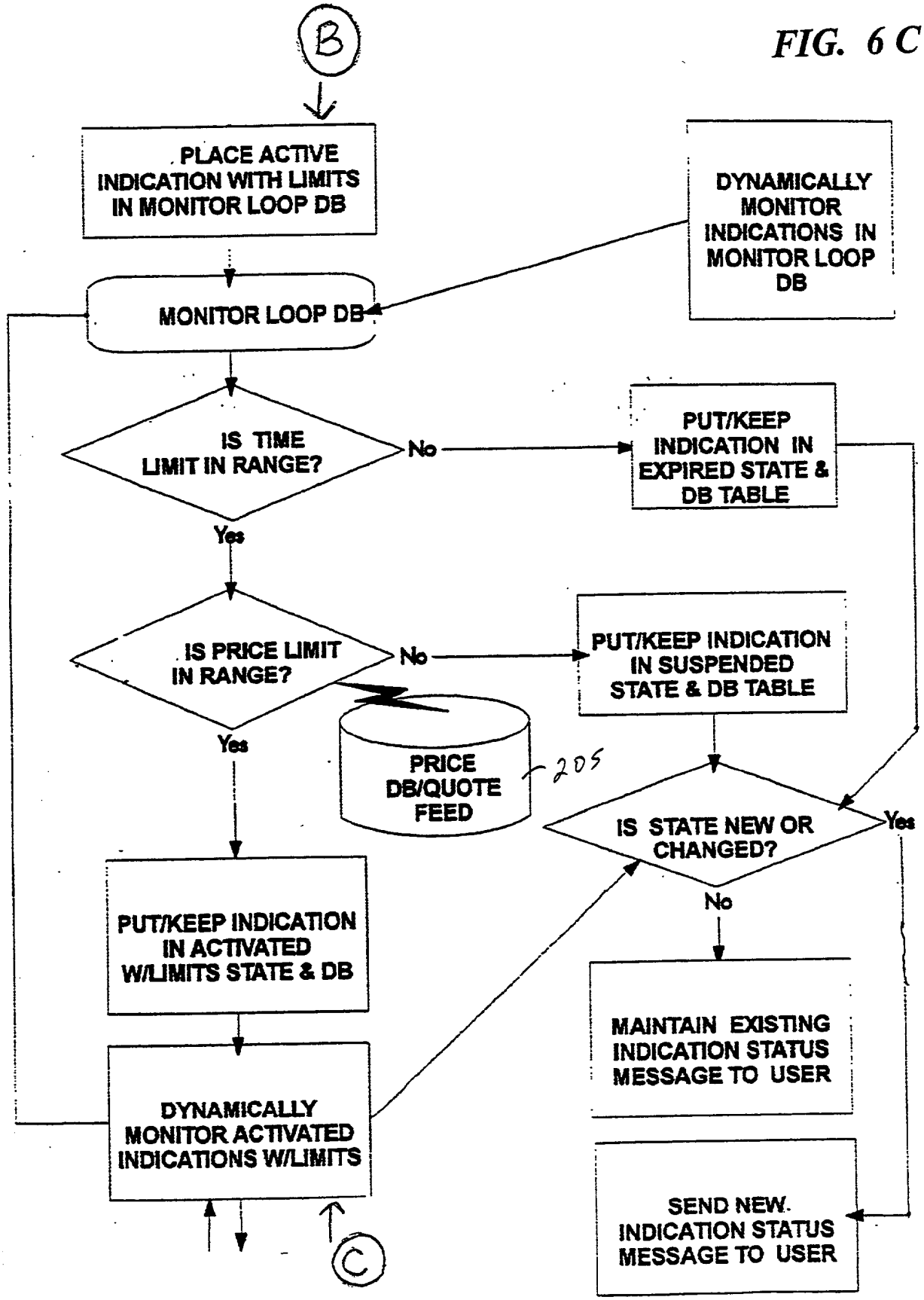

A
USER ENTERS INDICATION IN CERTAIN MODE ON ACTIVE BLOTTER
IS ITEM IN DESCRIPTION DATABASE?
No
REJECT & ISSUE "ITEM NOT SUPPORTED" MESSAGE
Yes
216
DOES AN EQUIVALENT INDICATION EXIST FOR THIS USER?
Yes
REJECT & ISSUE "DUPLICATE INDICATION" MESSAGE
218
No
CREATE NEW INDICATION RECORD & ID #
USER CHANGES EXISTING INDICATION ON ACTIVE BLOTTER
OF WHAT MODE IS INDICATION?
PENDING WITH OR WITHOUT LIMITS
PLACE INDICATION IN PENDING DB TABLE
220
222
ACTIVE
CURRENT STATUS REMAINS PENDING
NO LIMITS
WITH LIMITS
USER ACTIVATES PENDING INDICATION
PUT INDICATION INTO ACTIVATED STATE
PUT INDICATION INTO MONITOR LOOP
C
TO FIG. 6C MONITOR
B

FIG. 6 B

FIG. 6C


B
PLACE ACTIVE INDICATION WITH LIMITS IN MONITOR LOOP DB
DYNAMICALLY MONITOR INDICATIONS IN MONITOR LOOP DB
MONITOR LOOP DB
IS TIME LIMIT IN RANGE?
No
PUT/KEEP INDICATION IN EXPIRED STATE & DB TABLE
Yes
IS PRICE LIMIT IN RANGE?
No
PUT/KEEP INDICATION IN SUSPENDED STATE & DB TABLE
Yes
PRICE DB/QUOTE FEED
205
IS STATE NEW OR CHANGED?
Yes
No
PUT/KEEP INDICATION IN ACTIVATED W/LIMITS STATE & DB
MAINTAIN EXISTING INDICATION STATUS MESSAGE TO USER
DYNAMICALLY MONITOR ACTIVATED INDICATIONS W/LIMITS
SEND NEW INDICATION STATUS MESSAGE TO USER
C

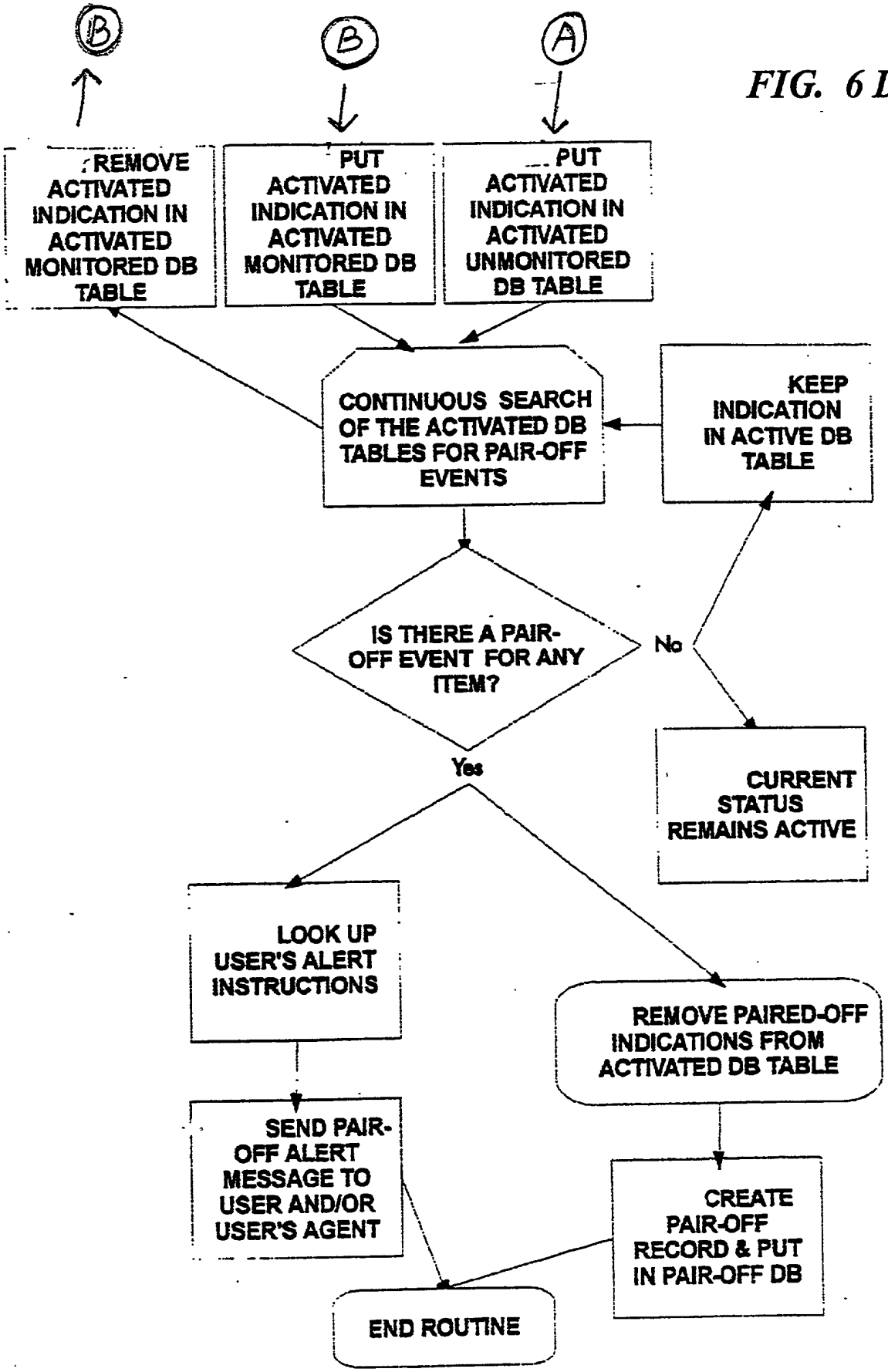

B
B
A
REMOVE ACTIVATED INDICATION IN ACTIVATED MONITORED DB TABLE
PUT ACTIVATED INDICATION IN ACTIVATED MONITORED DB TABLE
PUT ACTIVATED INDICATION IN ACTIVATED UNMONITORED DB TABLE
CONTINUOUS SEARCH OF THE ACTIVATED DB TABLES FOR PAIR-OFF EVENTS
KEEP INDICATION IN ACTIVE DB TABLE
IS THERE A PAIR-OFF EVENT FOR ANY ITEM?
No
Yes
CURRENT STATUS REMAINS ACTIVE
LOOK UP USER'S ALERT INSTRUCTIONS
REMOVE PAIRED-OFF INDICATIONS FROM ACTIVATED DB TABLE
SEND PAIR-OFF ALERT MESSAGE TO USER AND/OR USER'S AGENT
CREATE PAIR-OFF RECORD & PUT IN PAIR-OFF DB
END ROUTINE

FIG. 6 D

FIG. 7A

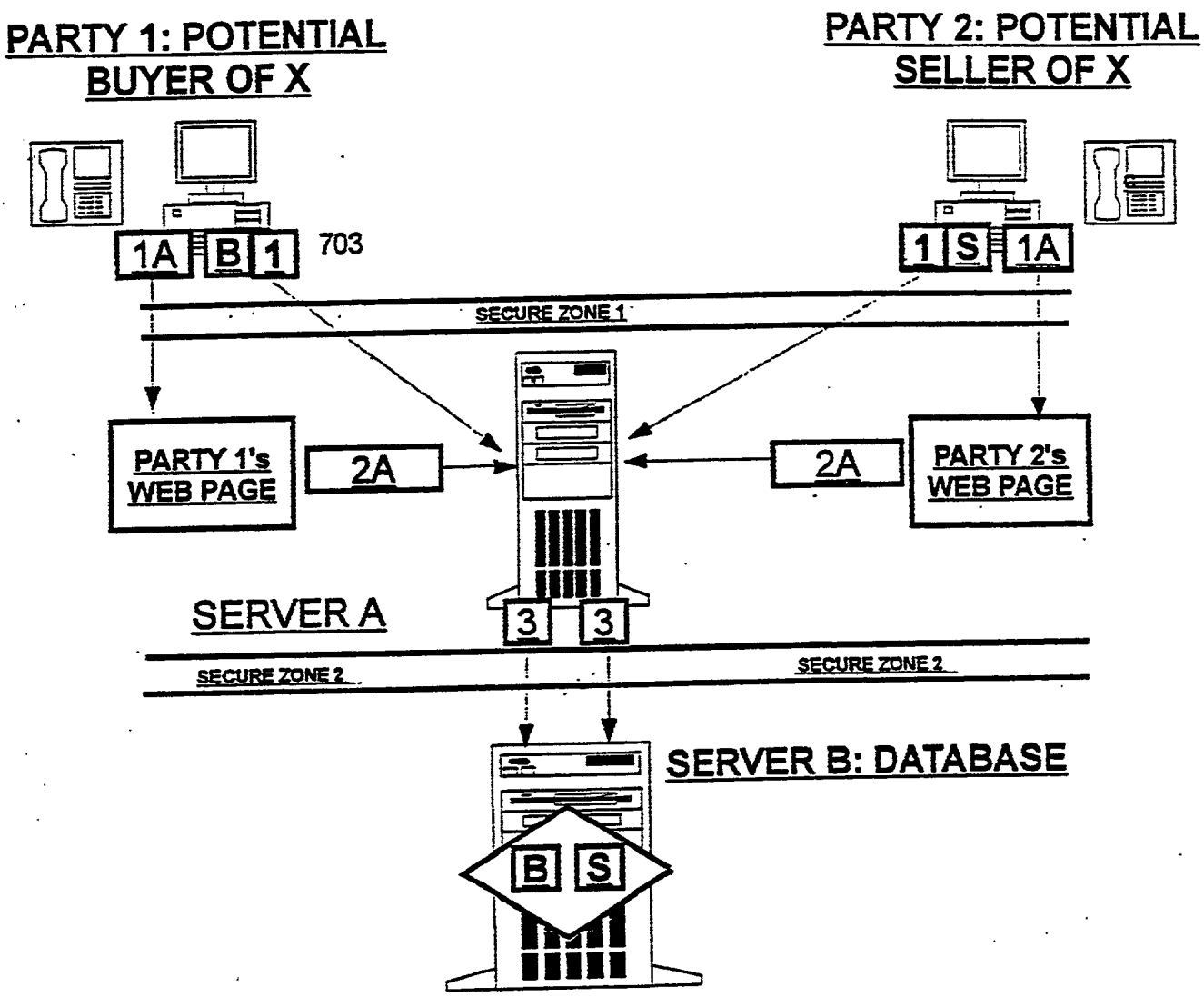

PARTY 1: POTENTIAL BUYER OF X
PARTY 2: POTENTIAL SELLER OF X
1A B 1
703
1 S 1A
SECURE ZONE 1
PARTY 1's WEB PAGE
2A
2A
PARTY 2's WEB PAGE
SERVER A
3 3
SECURE ZONE 2
SECURE ZONE 2
SERVER B: DATABASE
B S

FIG. 7 B

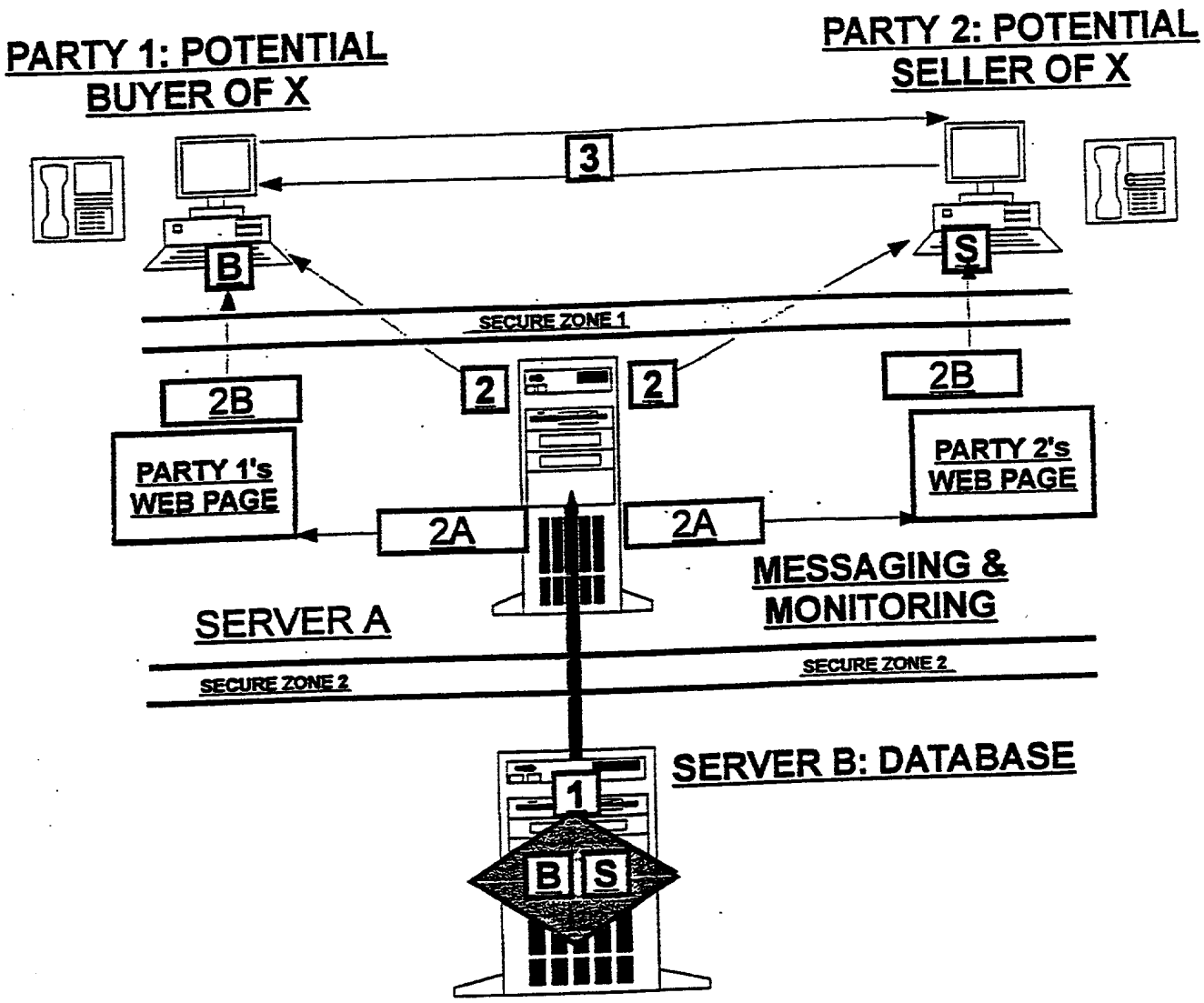
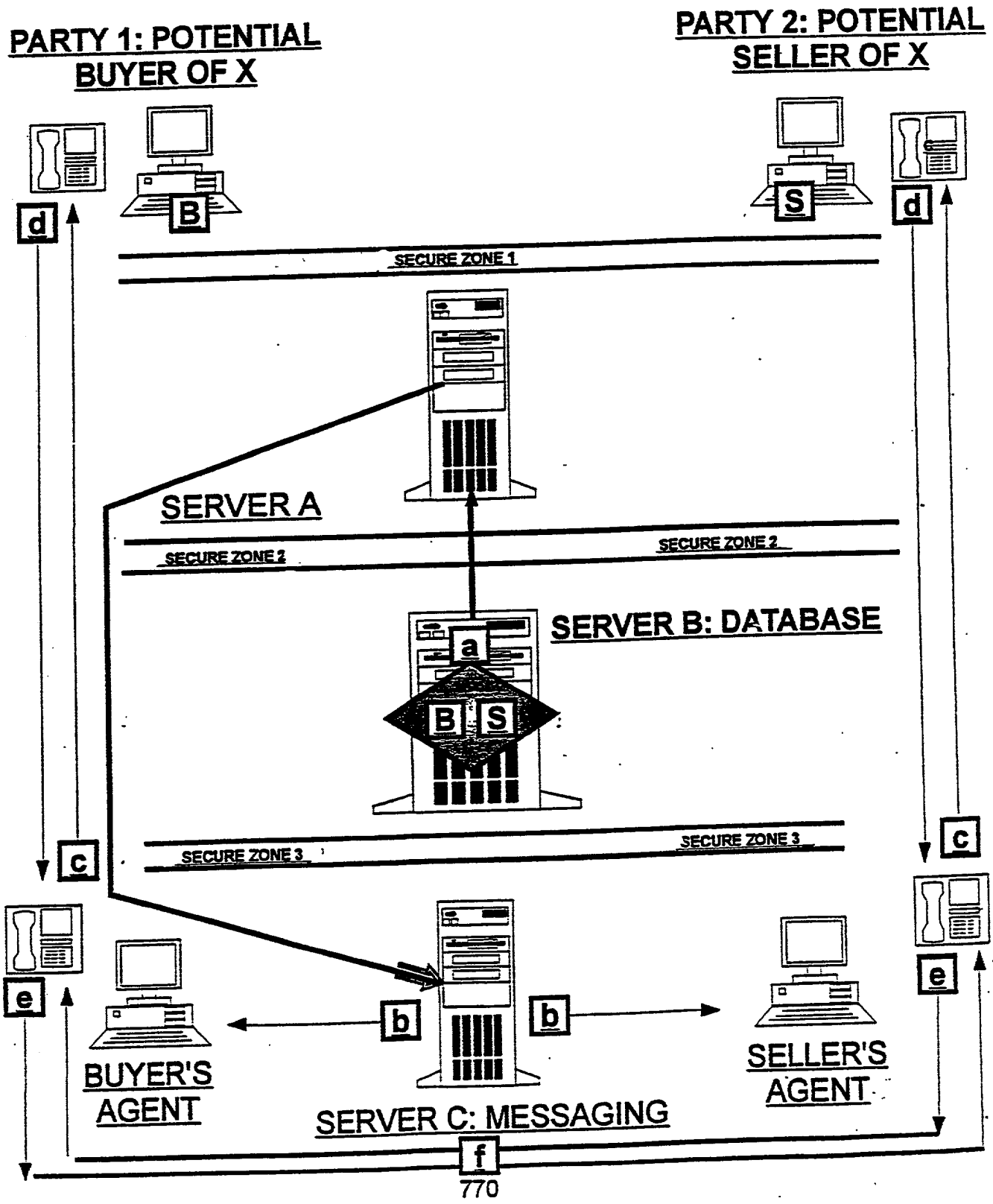

PARTY 1: POTENTIAL BUYER OF X
PARTY 2: POTENTIAL SELLER OF X
3
B
S
SECURE ZONE 1
2
2
2B
2B
PARTY 1's WEB PAGE
PARTY 2's WEB PAGE
2A
2A
MESSAGING & MONITORING
SERVER A
SECURE ZONE 2
SECURE ZONE 2
SERVER B: DATABASE
1
B
S

FIG. 7 C


PARTY 1: POTENTIAL BUYER OF X
PARTY 2: POTENTIAL SELLER OF X
B
S
d
d
SECURE ZONE 1
SERVER A
SECURE ZONE 2
SECURE ZONE 2
SERVER B: DATABASE
a
B
S
SECURE ZONE 3
SECURE ZONE 3
c
c
e
e
b
b
BUYER'S AGENT
SELLER'S AGENT
SERVER C: MESSAGING
f
770

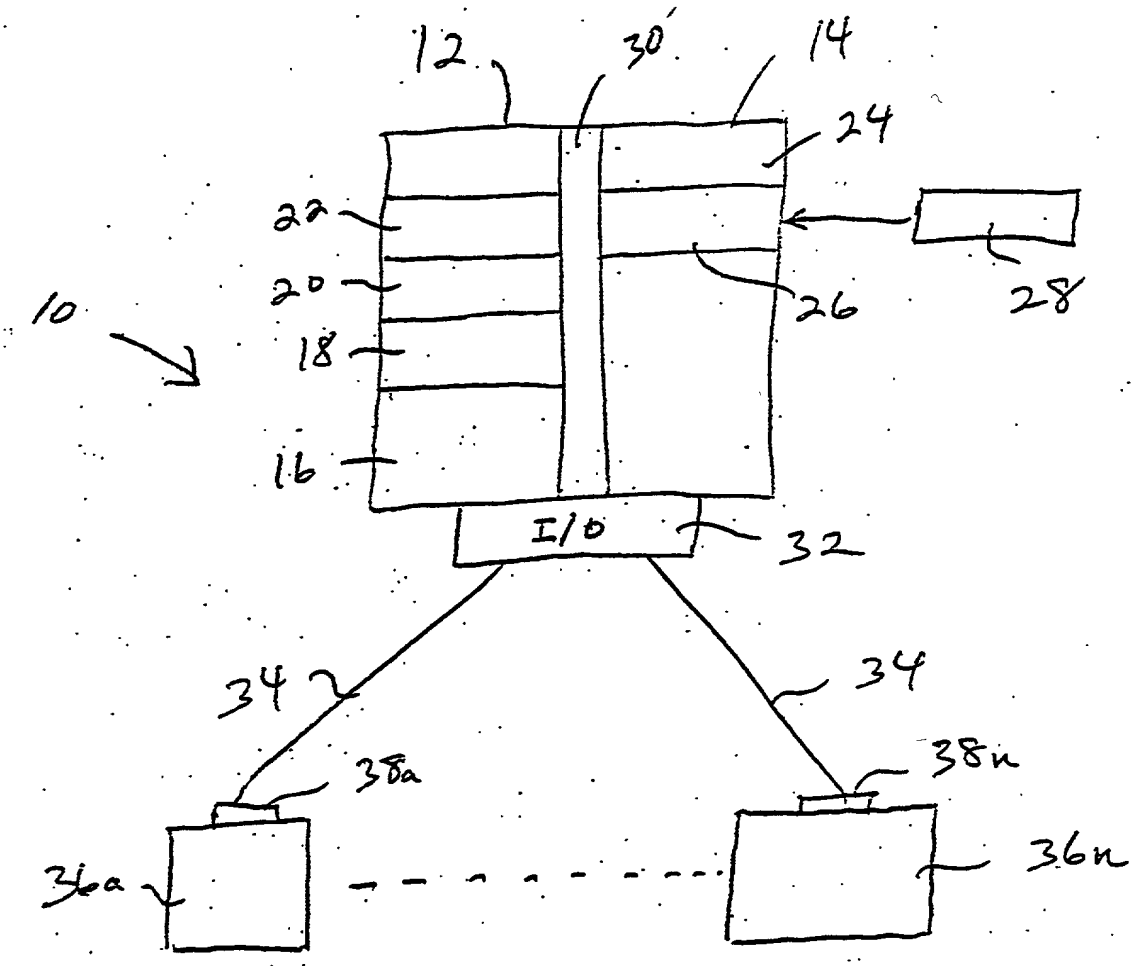


FIG. 8

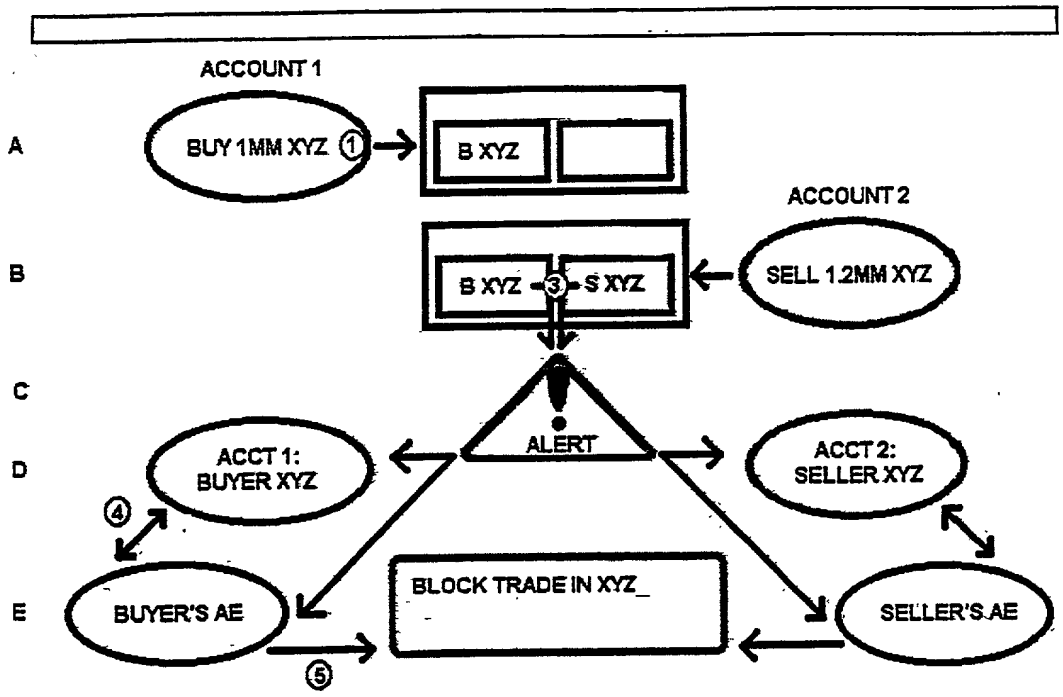

ACCOUNT 1
A
BUY 1MM XYZ ①
B XYZ
ACCOUNT 2
B
B XYZ ③ S XYZ
SELL 1.2MM XYZ
C
ALERT
D
ACCT 1:
BUYER XYZ
ACCT 2:
SELLER XYZ
④
E
BUYER'S AE
BLOCK TRADE IN XYZ_
SELLER'S AE
⑤

FIG. 9

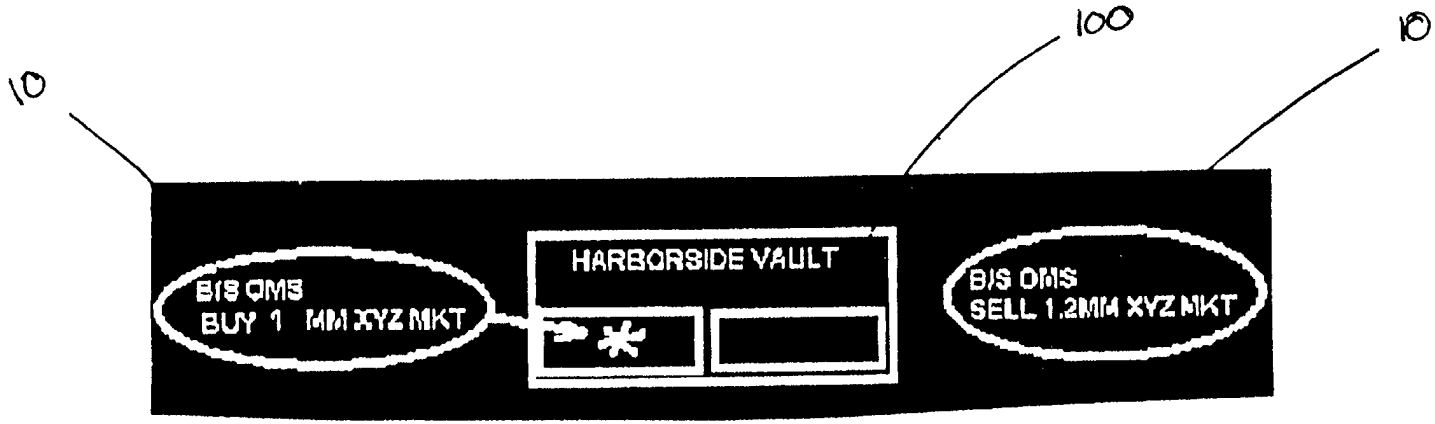
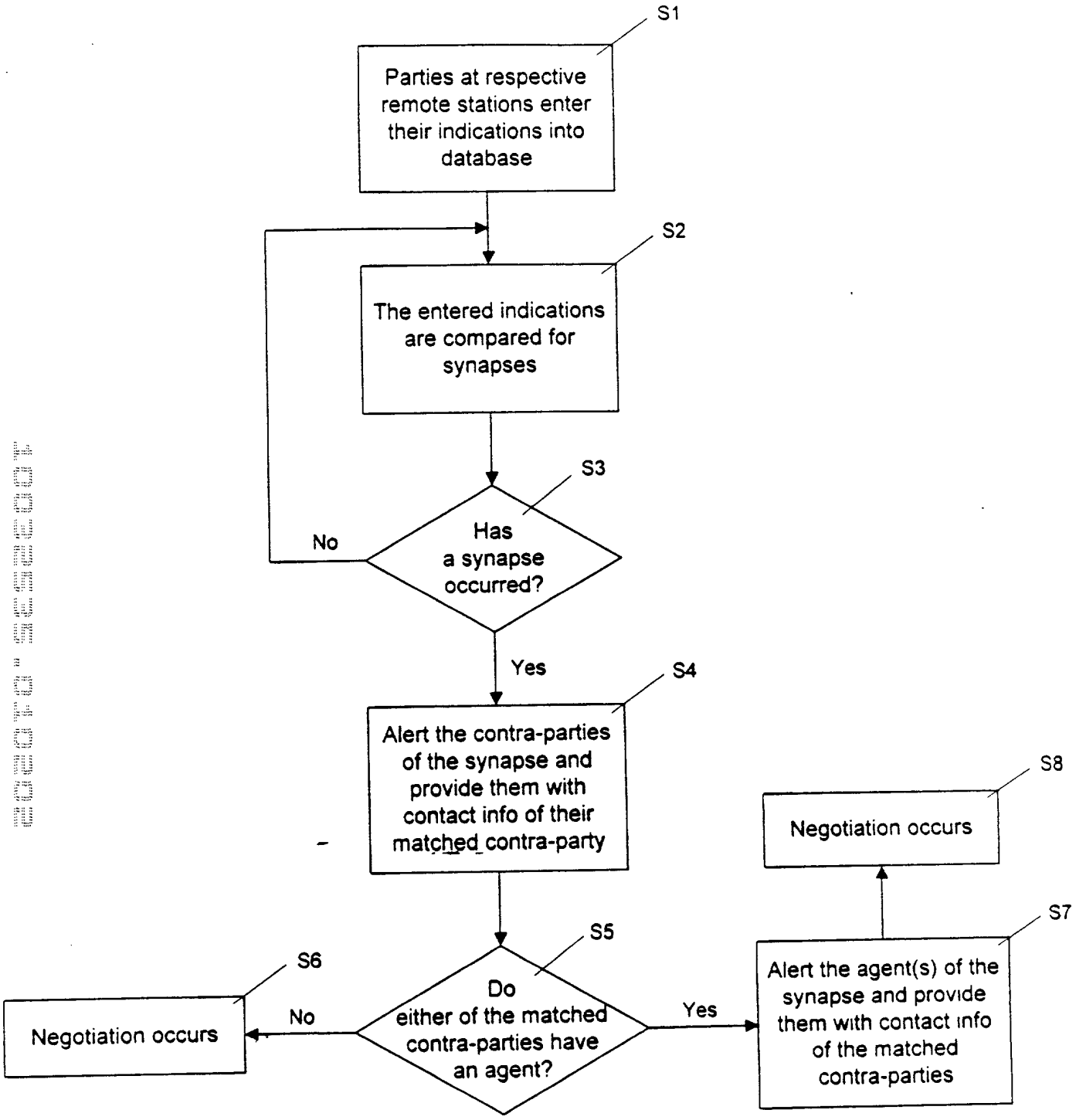

10
100
10
B/S OMS
BUY 1 MM XYZ MKT
HARBORSIDE VAULT
B/S OMS
SELL 1.2MM XYZ MKT

FIG. 10

FIG. 11


S1
Parties at respective remote stations enter their indications into database
S2
The entered indications are compared for synapses
S3
Has a synapse occurred?
No
Yes
S4
Alert the contra-parties of the synapse and provide them with contact info of their matched contra-party
S5
Do either of the matched contra-parties have an agent?
S6
Negotiation occurs
No
Yes
S7
Alert the agent(s) of the synapse and provide them with contact info of the matched contra-parties
S8
Negotiation occurs

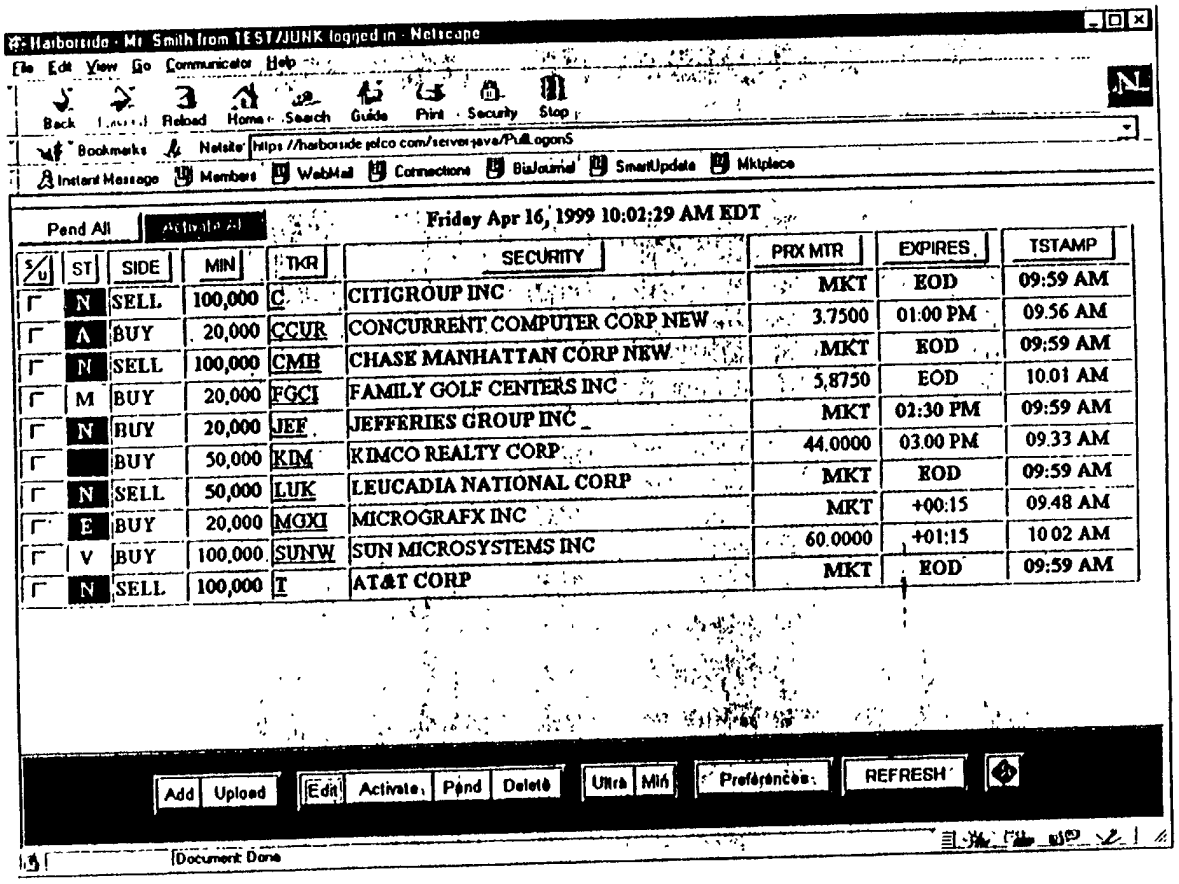

Harborside - Mr Smith from TEST/JUNK logged in - Netscape
File Edit View Go Communicator Help
Back Forward Reload Home Search Guide Print Security Stop
Bookmarks Netsite https://harborside.pelco.com/servlet/java/PullLogonS
Instant Message Members WebMail Connections BizJournal SmartUpdate Mktplace
Pend All
Activate All
Friday Apr 16, 1999 10:02:29 AM EDT
$/U ST SIDE MIN TKR SECURITY PRX MTR EXPIRES TSTAMP
N SELL 100,000 C CITIGROUP INC MKT EOD 09:59 AM
A BUY 20,000 CCUR CONCURRENT COMPUTER CORP NEW 3.7500 01:00 PM 09:56 AM
N SELL 100,000 CMB CHASE MANHATTAN CORP NEW MKT EOD 09:59 AM
M BUY 20,000 FGCI FAMILY GOLF CENTERS INC 5.8750 EOD 10:01 AM
N BUY 20,000 JEF JEFFERIES GROUP INC MKT 01:30 PM 09:59 AM
BUY 50,000 KIM KIMCO REALTY CORP 44.0000 03:00 PM 09:33 AM
N SELL 50,000 LUK LEUCADIA NATIONAL CORP MKT EOD 09:59 AM
E BUY 20,000 MGXI MICROGRAFX INC MKT +00:15 09:48 AM
V BUY 100,000 SUNW SUN MICROSYSTEMS INC 60.0000 +01:15 10:02 AM
N SELL 100,000 T AT&T CORP MKT EOD 09:59 AM
Add Upload Edit Activate Pend Delete Ultra Min Preferences REFRESH
Document Done

FIG. 12

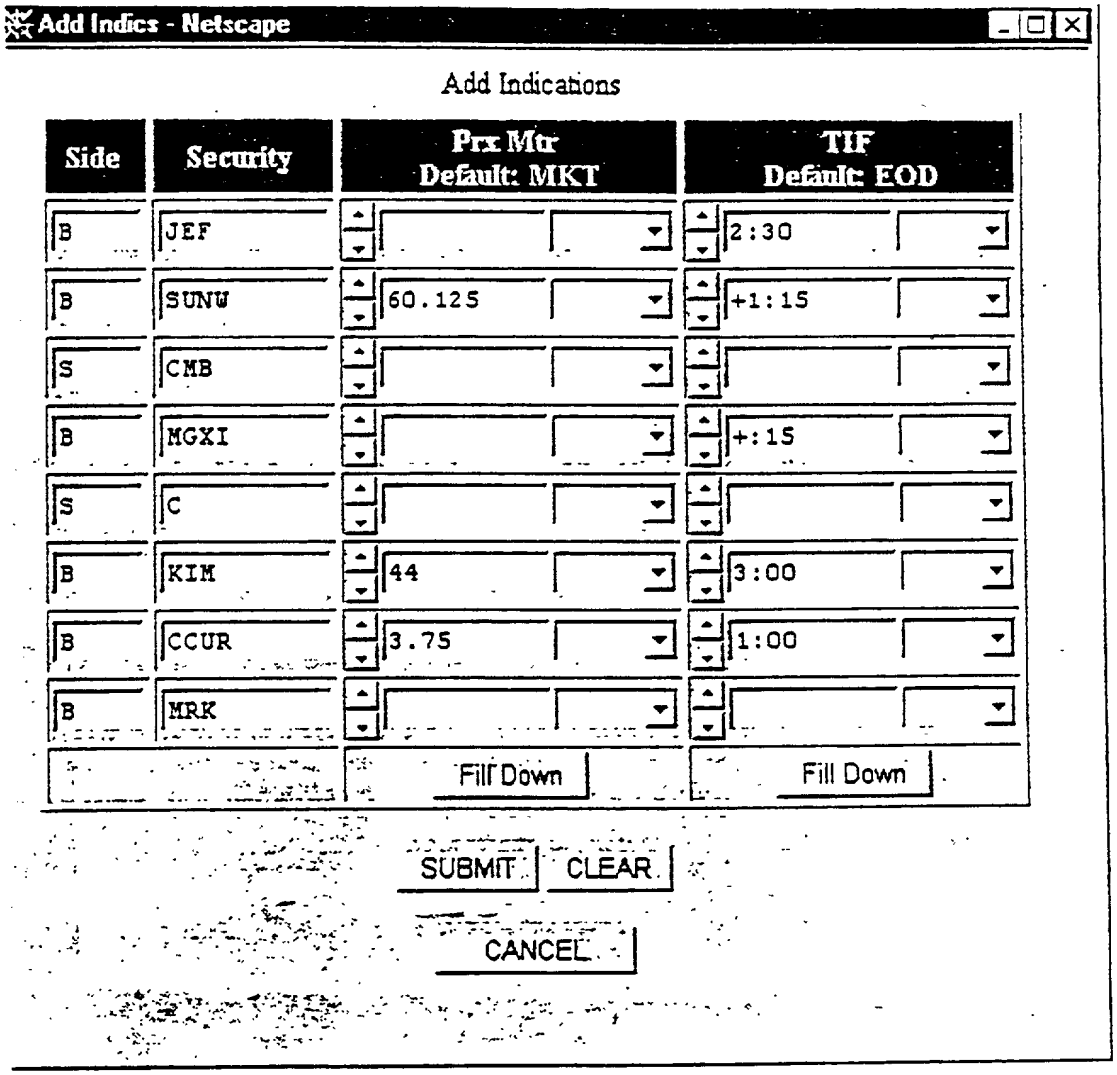

Add Indics - Netscape
Add Indications
Side
Security
Prx Mtr
Default: MKT
TIF
Default: EOD
B
JEF
2:30
B
SUNW
60.125
+1:15
S
CMB
B
MGXI
+:15
S
C
B
KIM
44
3:00
B
CCUR
3.75
1:00
B
MRK
Fill Down
Fill Down
SUBMIT
CLEAR
CANCEL

FIG. 13

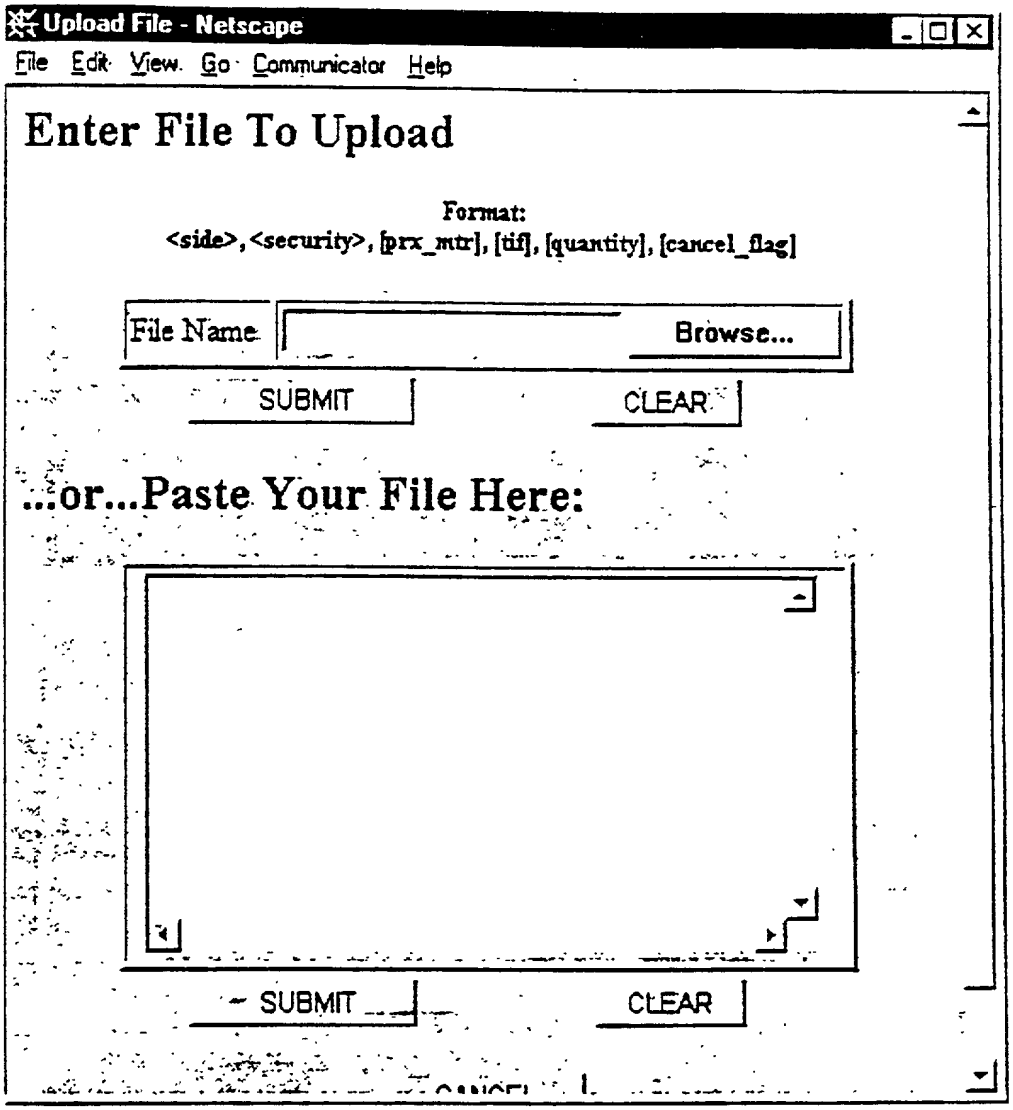

Upload File - Netscape
File Edit View Go Communicator Help
Enter File To Upload
Format:
<side>,<security>,[prx_mtr],[tif],[quantity],[cancel_flag]
File Name
Browse...
SUBMIT
CLEAR
...or...Paste Your File Here:
SUBMIT
CLEAR

FIG. 14

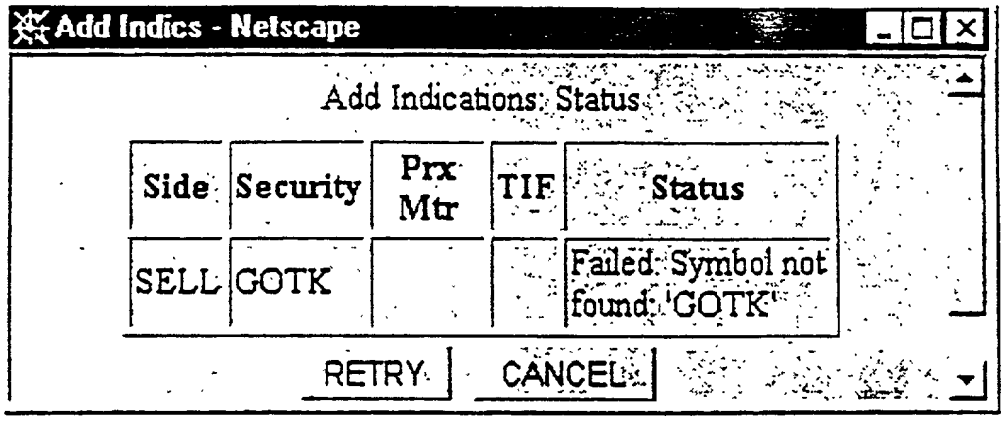

Add Indics - Netscape
Add Indications: Status
Side
Security
Prx Mtr
TIF
Status
SELL
GOTK
Failed: Symbol not found: GOTK
RETRY
CANCEL

FIG. 15

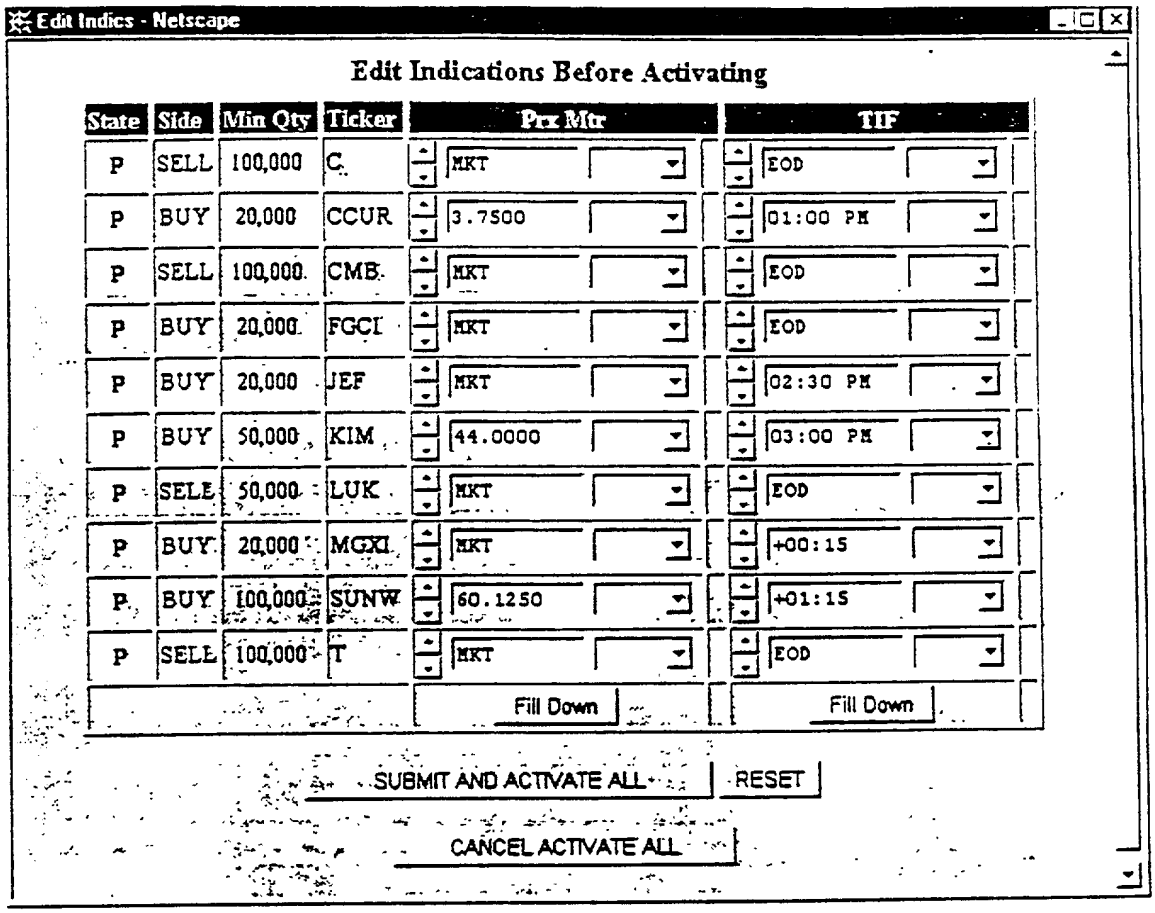

Edit Indics - Netscape
Edit Indications Before Activating
State
Side
Min Qty
Ticker
Prx Mtr
TIF
P SELL 100,000 C MKT EOD
P BUY 20,000 CCUR 3.7500 01:00 PM
P SELL 100,000 CMB MKT EOD
P BUY 20,000 FGCI MKT EOD
P BUY 20,000 JEF MKT 02:30 PM
P BUY 50,000 KIM 44.0000 03:00 PM
P SELL 50,000 LUK MKT EOD
P BUY 20,000 MGXI MKT +00:15
P BUY 100,000 SUNW 60.1250 +01:15
P SELL 100,000 T MKT EOD
Fill Down
Fill Down
SUBMIT AND ACTIVATE ALL
RESET
CANCEL ACTIVATE ALL

FIG. 16

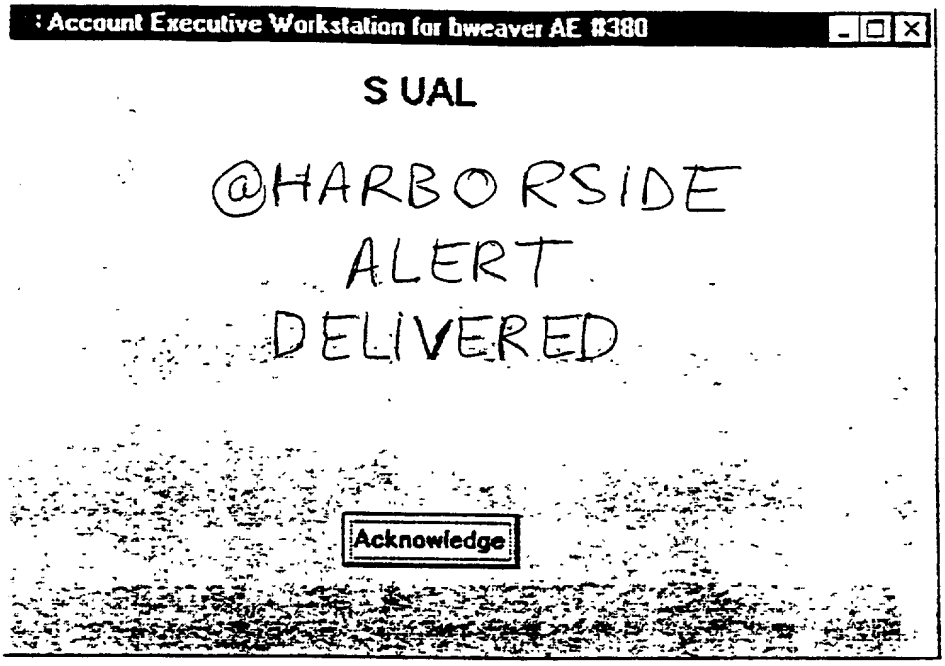

: Account Executive Workstation for bweaver AE #380
S UAL
@HARBORSIDE
ALERT
DELIVERED
Acknowledge

FIG. 17

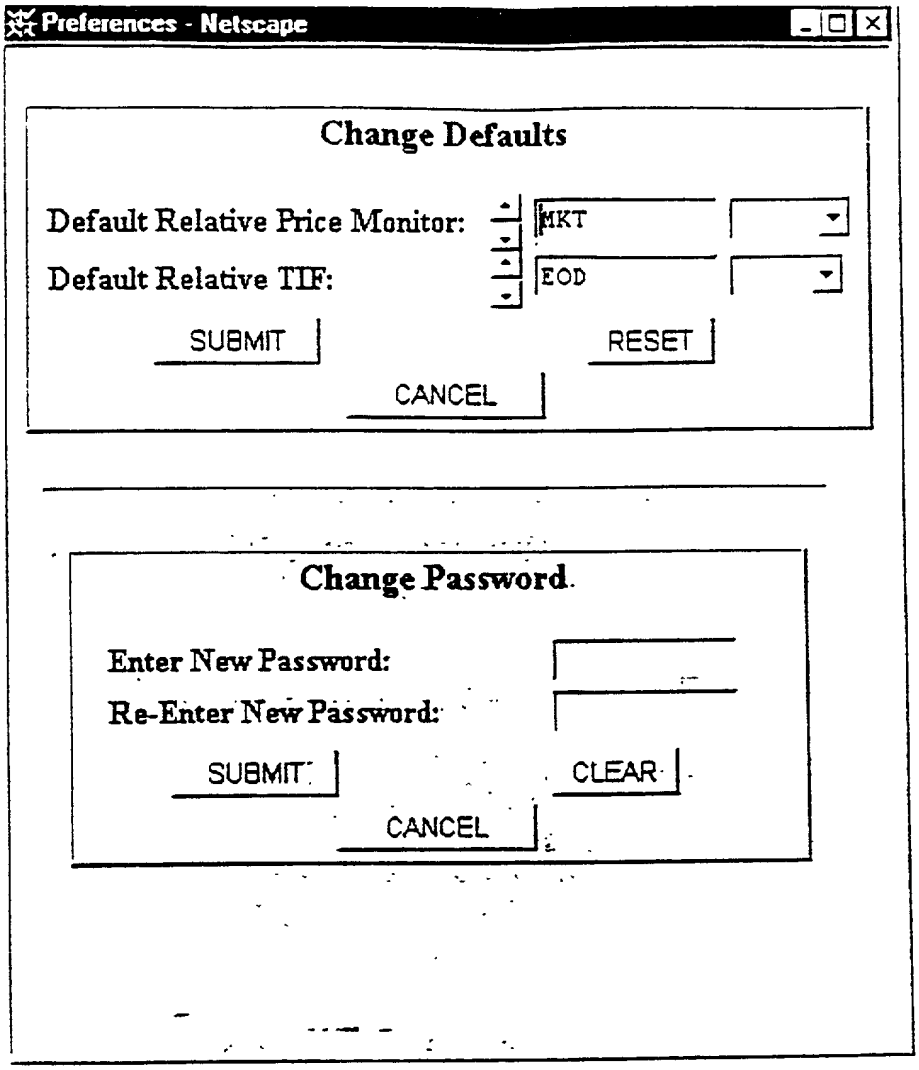

Preferences - Netscape
Change Defaults
Default Relative Price Monitor:
MKT
Default Relative TIF:
EOD
SUBMIT
RESET
CANCEL
Change Password
Enter New Password:
Re-Enter New Password:
SUBMIT
CLEAR
CANCEL

FIG. 18